

REMARKS

Claims 1, 21, and 25 are amended for purposes of expediting prosecution. Support for the amendments is provided by the specification as filed, for example by the embodiments described in paragraphs [0007], [0018], [0027], as well as the cancelled claims 24 and 26. In the discussion set forth below, Applicants do not acquiesce to any rejection or averment in the Office Action unless expressly stated. Claims 1-23, 24-25, and 27-33 are pending in the application. Reconsideration and allowance of the application are respectfully requested.

Claims 1-2 and 5-33 are thought to be patentable under 35 USC §102(e) over “Vigander” (“Evolutionary Fault Repair of Electronics in Space Applications” by Vigander *et al.*). The rejection is respectfully traversed because Vigander neither teaches nor suggests all of the claimed limitations.

According to claim 1, a consensus result is determined as a function of at least two of the generated result signals, and the evolving of a new design includes evaluating the new design for consistency with the consensus result and selecting the new design in response to a result signal of the new design being within a selected range of result signals from the consensus result. The selected new design replaces the design of the population selected for replacement.

With these features, “an evaluation function for evolving a population of designs is automatically generated as a function of result signals from the designs. With this approach, external intervention is not necessary for generating the evaluation function.” ([0007]). In other words, “a ‘known’ evaluation function is not necessary for evaluating the population for fitness, allowing the population to evolve independently of any outside intervention or otherwise previously established evaluation functions.” ([0018]).

Vigander does not appear to suggest these limitations. Rather, Vigander apparently relies on some known evaluation function (6.3). Since Vigander’s evaluation function is known, Vigander neither teaches nor suggests the limitations of using the consensus result in evaluating an evolved, new design, which provides for

selecting a newly evolved design when a result signal of the new design is within a selected range of result signals from the consensus result.

Independent claims 21 and 25 include limitations similar to those of claim 1, claims 2 and 5-21 depend from claim 1, claims 22-23 depend from claim 21, and claims 27-33 depend from claim 25 (claims 24 and 26 are cancelled). Therefore, claims 1-2 and 5-33 are novel over Vigander, and the rejection should be withdrawn.

Claims 3-4 are understood to be patentable under 35 USC §103(a) over Vigander in view of “Yao” (Making Use of Population Information in Evolutionary Artificial Neural Networks, IEEE 1998) to Yao. The rejection is respectfully traversed because the Office Action does not show that all the limitations are suggested by the combination and does not provide a proper motivation for modifying the teachings of Vigander with teachings of Yao.

Claims 3-4 depend from claim 1, and Yao neither teaches nor suggests those limitations of claim 1 which Vigander does not teach, as explained above. Therefore, the Office Action has not shown that the Vigander-Yao combination suggests all the limitations of claims 3-4. The rejection of claims 3-4 should be withdrawn because a *prima facie* case of obviousness has not been established.

CONCLUSION

Reconsideration and a notice of allowance are respectfully requested in view of the Remarks presented above. If the Examiner has any questions or concerns, a telephone call to the undersigned is invited.

Respectfully submitted,
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I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent & Trademark Office on October 1, 2008.

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